In the Claims:

Please amend the claims as follows:

1. (Previously Amended) A microprobe device for providing a signal to an external analyte meter indicating analyte presence in an analyte-containing bodily fluid of a subject, comprising:

a silicon substrate having an X length dimension and a Y width dimension and a Z thickness dimension, and having a front side and a back side extending in the X and Y dimensions;

a body portion formed by the silicon substrate;

a microprobe portion formed by the silicon substrate, having a body end connected to the body portion, and having a penetration end extending away from the body portion in the X length dimension for penetrating into the subject to access the fluids; and

a biosensor integrated into the silicon substrate, for sensing analyte presence and for providing a signal in response to the analyte presence.

B1

2. (Original) The device of claim 1, wherein the microprobe portion is width tapered along the X length dimension, converging from a larger Y width dimension at the body end to a smaller Y width dimension at the penetration end.

3. (Original) The device of claim 2, wherein the convergence of the microprobe taper is uniform establishing a constant change in the Y width dimension.

4. (Previously Amended) The device of claim 2, wherein the convergence of the microprobe taper establishes a continuous change in the Y width dimension for optimizing stress distribution during penetration.

5. (Original) The device of claim 1, wherein the Y width of the microprobe portion is about 200 micrometers at the body end and about 30 micrometers at the penetration end.

6. (Previously Amended) The device of claim 1, wherein the X length of the microprobe portion is from about 0.5 mm to about 2.5 mm.

7. (Original) The device of claim 1, wherein the microprobe portion has a penetration depth of from about 0.5 mm to about 2 mm.

8. (Original) The device of claim 1, wherein the X length of the body portion is from about 0.3 mm to about 2 mm, and the Y width of the body portion is from about 0.3 mm to about 2 mm.

9. (Original) The device of claim 1, wherein the Y width dimension of the microprobe portion terminates in a chisel shaped point at the penetration end.

10. (Original) The device of claim 1, wherein the Y width dimension of the microprobe portion terminates in a symmetrically shaped point at the penetration end.

11. (Original) The device of claim 1, further comprising a silicon microfillet portion at the connection between the body end of the microprobe portion and the body portion.

12. (Previously Amended) The device of claim 1, further comprising a signal interface structure integrated into the silicon substrate on the body portion thereof for interfacing with an analyte meter; and a signal carrier integrated into the silicon substrate between the biosensor and interface structure for carrying the signal.

B1

13. (Original) The device of claim 12, wherein the biosensor is an electrobiosensor, the signal is carried by electrical energy, the signal carrier is a pair of electrically conductive leads, and the interface structure is a pair of electrically conductive contacts.

14. (Original) The device of claim 13, wherein the biosensor is an electrochemical biosensor responsive to the analyte presence by altering the electrical energy of the signal.

15. (Original) The device of claim 14, wherein the alteration in the electrical energy of the signal is proportional to the concentration of the analyte presence.

16. (Original) The device of claim 13, wherein the biosensor is an oscillating electrogravimetric biosensor responsive to the analyte presence by altering oscillation frequency.

17. (Original) The device of claim 16, wherein the alteration in the oscillation frequency indicates the concentration of the analyte presence.

18. (Original) The device of claim 13, further comprising an electrically insulative layer on the silicon substrate.

19. (Original) The device of claim 18, wherein the insulative layer is a silicon oxide film.

20. (Original) The device of claim 18, wherein the biosensor is deposited on the insulative layer.

21. (Original) The device of claim 18, wherein the conductive leads and the conductive contacts are conductive metal deposited on the insulative layer.

22. (Original) The device of claim 18, wherein the conductive leads and conductive contacts are conductive carbon deposited on the insulative layer.

23. (Previously Amended) The device of claim 18, wherein the conductive leads and conductive contacts are doped silicon.

24. (Original) The device of claim 18, wherein the silicon substrate is sufficiently doped to form one of the pair of conductive leads and one of the pair of conductive contacts.

25. (Previously Amended) The device of claim 12, wherein the biosensor is an optical biosensor, the signal is alterations in photon energy, the signal carrier is an optrode; and the interface structure is an optical coupler.

B 1

26. (Original) The device of claim 1, wherein the biosensor is positioned on the microprobe portion sufficiently distant from the body end to pass into the subject during penetration.

27. (Original) The device of claim 1, wherein the biosensor is positioned on the microprobe portion near the penetration end.

28. (Withdrawn).

29. (Withdrawn).

30. (Withdrawn).

31. (Original) The device of claim 1, wherein the surface of the side of the silicon substrate is planar, and the biosensor is deposited onto the planar surface.

32. Rewritten as claim 48.

33. Rewritten as claim 49.

34. (Original) The device of claim 1, further comprising multiple biosensors integrated into either or both sides of the silicon substrate.

35. Rewritten as claim 50.

36. (Original) The device of claim 34, wherein each of the multiple biosensors is positioned at a different location along the X dimension of the microprobe to sense analyte presence at a different penetration depth.

37. (Original) The device of claim 1, wherein the silicon substrate is formed of single crystal silicon.

Claims 38-47: Withdrawn.

48. (Previously Presented) A microprobe device for providing a signal to an external analyte meter indicating analyte presence in an analyte-containing bodily fluid of a subject, comprising:

a silicon substrate having an X length dimension and a Y width dimension and a Z thickness dimension, and having a front side and a back extending in the X and Y dimensions and a cavity extending into the silicon substrate in the Z thickness dimension;

B 1 a body portion formed by the silicon substrate;

a microprobe portion formed by the silicon substrate, having a body end connected to the body portion, and having a penetration end extending away from the body portion in the X length dimension for penetrating into the subject to access the fluids; and

a biosensor integrated into the silicon substrate, for sensing analyte presence and for providing a signal in response to the analyte presence, the biosensor being deposited onto the silicon within the cavity.

49. (Previously Presented) The microprobe device of claim 48 wherein the cavity extends completely through the substrate in the Z thickness dimension.

50. (Previously Presented) A microprobe device for providing a signal to an external analyte meter indicating analyte presence in an analyte-containing bodily fluid of a subject, comprising:

a silicon substrate having an X length dimension and a Y width dimension and a Z thickness dimension, and having a front side and a back side extending in the X and Y dimensions;

a body portion formed by the silicon substrate;

a microprobe portion formed by the silicon substrate, having a body end connected to the body portion, and having a penetration end extending away from the body portion in the X length dimension for penetrating into the subject to access the fluids; and

multiple biosensors integrated into either or both sides of the silicon substrate, for sensing analyte presence and for providing a signal in response to the analyte presence, wherein each of the biosensors senses the presence of a different analyte.

51. (Amended) A microprobe device for providing a signal to an external analyte meter indicating analyte presence in an analyte-containing bodily fluid of a subject, comprising:

a silicon substrate having an X length dimension and a Y width dimension and a Z thickness dimension, and having a top surface and a bottom surface extending in the X and Y dimensions;

a body portion formed by the silicon substrate;

a microprobe portion formed by the silicon substrate, having a body end connected to the body portion, and having a penetration end extending away from the body portion in the X length dimension for penetrating into the subject to access the fluids, the microprobe portion tapering smoothly in width along at least a portion of the X length dimension ~~converging~~ from a larger Y width dimension at the body end to a smaller Y width dimension at the penetration end; and

B1

a biosensor integrated into the silicon substrate, for sensing analyte presence and for providing a signal in response to the analyte presence.

52. (Previously Presented) The microprobe device of claim 51 wherein the microprobe portion has a width at the body end that is about 200 micrometers and a width at the penetration end that is about 30 micrometers.

53. (Previously Presented) The microprobe device of claim 51 wherein the microprobe portion has flat sides connecting the top and bottom surfaces.

54. Cancelled

55. (Previously Presented) A microprobe device for providing a signal to an external analyte meter indicating analyte presence in an analyte-containing bodily fluid of a subject, comprising:

a single crystal silicon substrate having an X length dimension and a Y width dimension and a Z thickness dimension,

a body portion formed by the silicon substrate;

a microprobe portion formed by the silicon substrate, having a body end connected to the body portion, and having a penetration end extending away from the body portion in the X length dimension for penetrating into the subject to access the fluids, the microprobe portion having a width at the body end that is about 200 micrometers and a width at the penetration end that is about 30 micrometers; and

a biosensor integrated into the silicon substrate, for sensing analyte presence and for providing a signal in response to the analyte presence.

56. (Previously Presented) A microprobe device for providing a signal to an external analyte meter indicating analyte presence in an analyte-containing bodily fluid of a subject, comprising:

a single-crystal silicon substrate having an X length dimension and a Y width dimension and a Z thickness dimension, and having a front side and a back side extending in the X and Y dimensions;

B 1

a body portion formed by the single-crystal silicon substrate;

a microprobe portion formed by the single-crystal silicon substrate, having a body end connected to the body portion, and having a penetration end extending away from the body portion in the X length dimension for penetrating into the subject to access the fluids; and

a biosensor integrated into the single-crystal silicon substrate, for sensing analyte presence and for providing a signal in response to the analyte presence.

57. (New) The microprobe device of claim 1 wherein the microprobe portion has a thickness in the Z direction that is less than the thickness of the body portion.

58. (New) The microprobe device of claim 51 wherein the silicon substrate is a single crystal.

59. (New) The microprobe device of claim 51 wherein the microprobe portion is smoothly tapered along the entire length of the X direction.